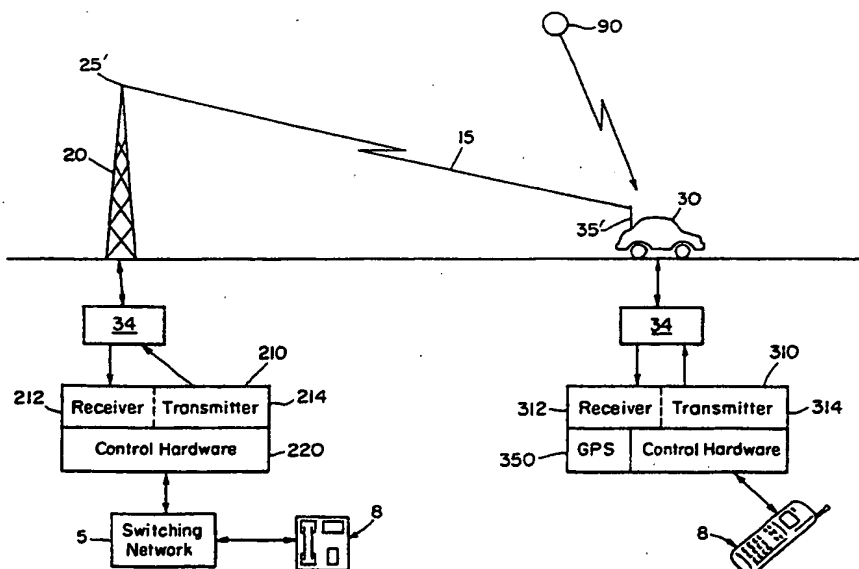




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(21) International Application Number: PCT/US97/18780		(74) Agents: HOOVER, Thomas, O. et al.; Hamilton, Brook, Smith & Reynolds, P.C., Two Militia Drive, Lexington, MA 02173 (US).	
(22) International Filing Date: 10 October 1997 (10.10.97)			
(30) Priority Data: 08/729,289 10 October 1996 (10.10.96) US		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/729,289 (CIP) Filed on 10 October 1996 (10.10.96)		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(71) Applicant (for all designated States except US): TERATECH CORPORATION [US/US]; 223-A Middlesex Turnpike, Burlington, MA 01803 (US).		(88) Date of publication of the international search report: 20 August 1998 (20.08.98)	
(72) Inventors; and (75) Inventors/Applicants (for US only): VELAZQUEZ, Scott, R. [US/US]; Ocean Place Tower, 388 Ocean Avenue, No. 1212, Revere, MA 02151-2668 (US). BROADSTONE, Steven, R. [US/US]; 14 Hammond Place, Woburn, MA 01801 (US). CHIANG, Alice, M. [US/US]; 4 Glenfield East, Weston, MA 02193 (US).			

(54) Title: COMMUNICATION SYSTEM USING GEOGRAPHIC POSITION DATA



(57) Abstract

A wireless communication system employs directive antenna arrays and knowledge of position of users to form narrow antenna beams to and from desired users and away from undesired users to reduce co-channel interference. By reducing co-channel interference coming from different directions, spatial filtering with antenna arrays improves the call capacity of the system. A space division multiple access (SDMA) system allocates a narrow antenna beam pattern to each user in the system so that each user has its own communication channel free from co-channel interference. The position of the users is determined using geo-location techniques. Geo-location can be derived via triangulation between cellular base stations or via a global positioning system (GPS) receiver.



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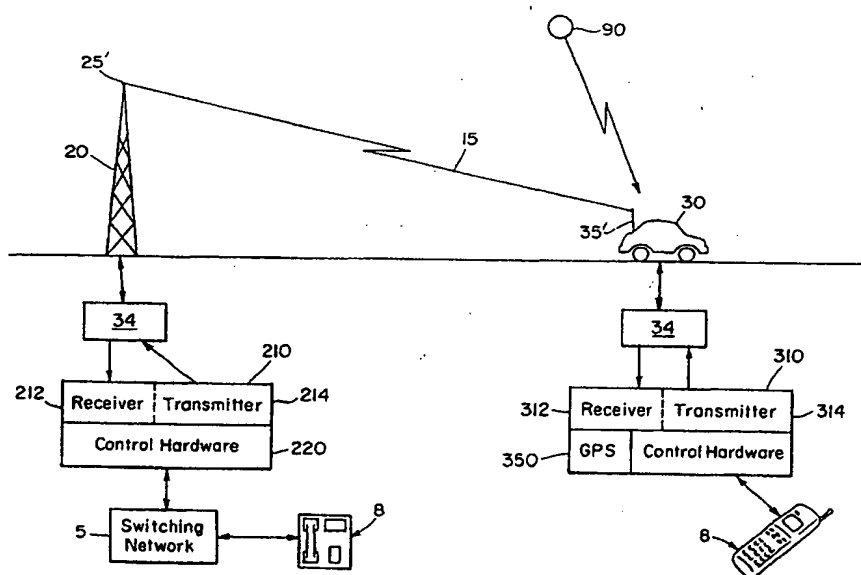
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/18780

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04Q7/22 G01S5/02 H04Q7/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04Q H01Q G01S

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 271 486 A (MOTOROLA LTD) 13 April 1994	1-5. 8-11. 16-20, 23-26
Y	see page 1, line 21 - line 24	6, 7, 12, 14, 15, 21, 22, 27
Y	see page 2, line 23 - line 32	29-32, 34-36, 38-40, 42-44, 46
	see page 4, line 34 - page 5, line 13 see page 5, line 21 - line 32 see page 7, line 30 - page 8, line 10 see page 15, line 6 - line 13 see abstract; claims 1, 12, 15, 17, 18, 26, 29 --- -/--	

☒ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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